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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 09/410,484
Filing Date: September 30, 1999
Appellant(s): WADSTEIN ET AL.

John Mitchell Jones
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 10/27/08 appealing from the Office action mailed 1/25/08.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

| | | |
|---|---|---|
| 5554646 | Cook et al. | 9-1996 |
| 4474773 | Shinitzky | 10-1984 |

Kawamura et al. Factors that Affect Calorie Sensitive and Calorie-Insensitive Reduction inBlood Pressure During Short-term Calorie Restriction in Overweight Hypertensive Women. Hypertension 1996, 27, pp 408-413

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 7 and 9 remain/are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (US 5,554,646) in view of Kawamura et al. (Hypertension 1996, 27, 408-413) and Shinitzky et al. (US 4,474,773).

Applicant claims a method of treating hypertension in humans.

**Determination of the scope and content of the prior art**

**(MPEP 2141.01)**

Cook et al. disclose a method of reducing body fat comprising the administration of a safe and effective amount of conjugated linoleic acid (Abstract and claims 1-9). Cook et al. define conjugated linoleic acid as including mixtures and salts thereof (Column 4, lines 21-26). Cook et al. disclose 9,11-octadecadienoic acid and 10,12-octadecadienoic acid as conjugated linoleic acids obtained by their methods and therefore reading on instant claim 3 (Column 4, lines 37-41 and 60-67). Other geometric isomers, including cis-9, cis-11, can be obtained consequently reading on instant claim 2 (Column 4, lines 48-59 and column 5, lines 3-8)). Cook et al. disclose the addition of 0.1 to 10 grams of conjugated linoleic acid to the diet of humans as a food supplement thus reading on instant claim 9 (Column 2, example 3). Since the material was ingested, then the conjugated linoleic acid was administered orally and therefore reads on instant claim 7.

Kawamura et al. provide a nexus teaching between hypertension, weight loss and decreases in blood pressure. Kawamura et al. teach that changes in body weight exhibited significant correlations with blood pressure reduction in hypertensive overweight human patients (Abstract, pages 1 and 2; page 9, final paragraph).

Shinitzky et al. teach methods of treating warmblooded mammals comprising administering a pharmaceutically effective amount of a composition comprising 5-10% linoleic acid for the treatment of hypertension (Claims 1, 4 and 24).

**Ascertainment of the difference between the prior art and the claims**

**(MPEP 2141.02)**

Cooke et al. do not expressly teach a method of treating hypertension in humans.

**Finding of prima facie obviousness**

**Rational and Motivation (MPEP 2142-2143)**

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to treat a hypertensive human patient with the conjugated linoleic acid method of Cooke et al. and produce the instant invention.

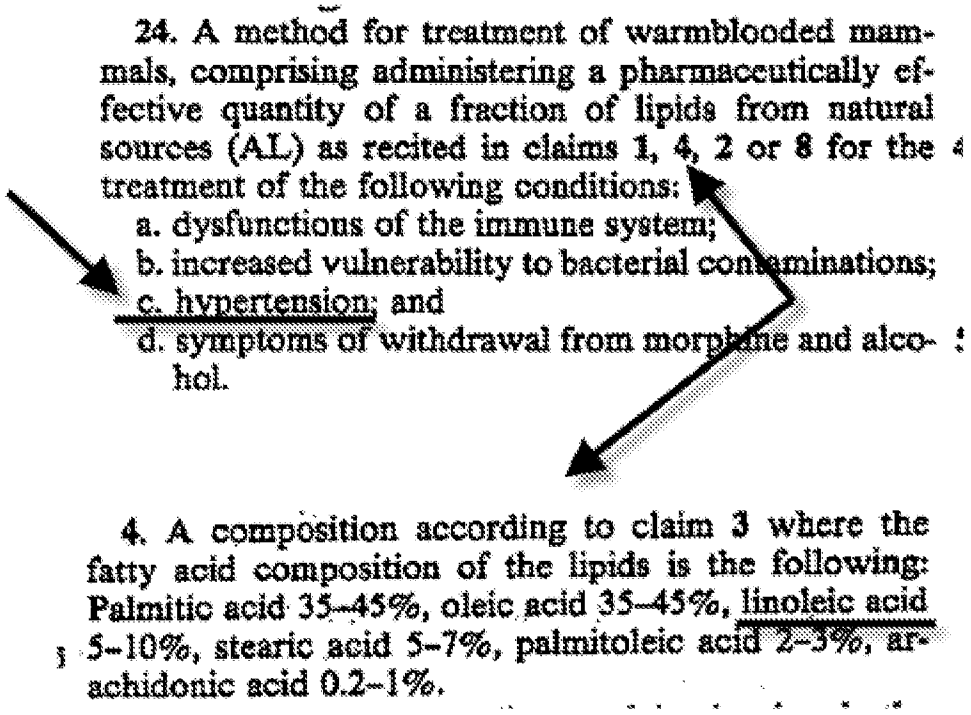
One of ordinary skill in the art would have been motivated to do this because Cooke et al. provide a method of reducing body fat and Kawamura et al. teach that reduction in weight in hypertensive patients results in a lowering of blood pressure. Furthermore, Shinitzky et al. provide the teaching that linoleic acid (C18:2, cis-9, cis12) can be used to treat hypertension. Since conjugated linoleic acid is a mixture of positional and geometrical isomers of linoleic acid, then one of ordinary skill in the art would immediately envision conjugated linoleic acid in the treatment of hypertension. In fact, similar properties may normally be presumed when compounds are very close in structure. Dillon, 919 F.2d at 693, 696, 16 USPQ2d at 1901, 1904. See also In re Grabiak, 769 F.2d 729, 731, 226 USPQ 870, 871 (Fed. Cir. 1985) ("When chemical compounds have very close' structural similarities and similar utilities, without more a prima facie case may be made."). Thus, evidence of similar properties or evidence of any useful properties disclosed in the prior art that would be expected to be shared by the claimed invention weighs in favor of a conclusion that the claimed invention would have been obvious. Dillon, 919 F.2d at 697-98, 16 USPQ2d at 1905; In re Wilder, 563

F.2d 457, 461, 195 USPQ 426, 430 (CCPA 1977); In re Linter, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Thus, the method of Cooke et al. is beneficial to the instantly claimed patient population and would have been obvious to one of ordinary skill in the art.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**(10) Response to Argument**

Appellent asserts that the Examiners interpretation of the secondary reference of Shinitzky et al. as being "scientifically incorrect and inaccurate to state that Shinitzky et al. teaches that linoleic acid can be used to treat hypertension." And Appellent asserts that Shinitzky does not teach that linoleic acid can be used to treat hypertension. Respectfully the Examiner cannot agree. The relevant claims of Shinitzky et al. are reproduced below with emphasis added by the Examiner:



24. A method for treatment of warmblooded mammals, comprising administering a pharmaceutically effective quantity of a fraction of lipids from natural sources (A.L) as recited in claims 1, 4, 2 or 8 for the treatment of the following conditions:

a. dysfunctions of the immune system;

b. increased vulnerability to bacterial contaminations;

c. hypertension; and

d. symptoms of withdrawal from morphine and alcohol.

4. A composition according to claim 3 where the fatty acid composition of the lipids is the following: Palmitic acid 35–45%, oleic acid 35–45%, linoleic acid 5–10%, stearic acid 5–7%, palmitoleic acid 2–3%, arachidonic acid 0.2–1%.

It is clear and concise that Shinitzky et al. disclose a method a method of treating hypertension using a composition comprising linoleic acid. The claim language of Shinitzky et al. is not ambiguous or vague or unclear. It is unthinkable to come to any other conclusion. This has been known in the art since 1984.

Appellent asserts that linoleic acid and conjugated linoleic acid have different properties and directs the Examiner to the Bruheim Declaration. The structures of linoleic acid and conjugated linoleic acids are (From page 2 of reference 31 of the IDS submitted on 1/17/01: Belury, Nut. Rev 1995, 53(4), 83-9):

**Table 2. Comparison of Linoleic Acid and CLA Structures[a]**

| Fatty Acid | Positional Isomer | Predominant Geometric Isomer *In Vivo* |
|---|---|---|
| Linoleic Acid |  | |
| | 9,12-Octadecadienoate | *c*9,*c*12 |
| |  | *c*9,*t*11 *t*9,*c*11 |
| | 9,11-Octadecadienoate | |
| CLA |  | |
| | 10,12-Octadecadienoate | N.S.[b] |

[a] There are eight possible positional and geometric isomers of 9,11- and 10,12-CLA (*c*,*c*; *t*,*t*; *c*,*t*; *t*,*c*). Examples of CLA isomers in vivo and in foods are presented here.[14,17,18,21,25]

Thus conjugated linoleic acid is not one specie but rather a mixture of species with at least 8 possible positional and geometric isomers as shown above. A critical comparison of the biological properties of between linoleic acid and the mixture of isomers that comprises conjugated linoleic acid would have to take into consideration which isomers are present and in what ratios. Failing that, it is reasonable to assert that isomers have similar properties. In fact, similar properties may normally be presumed when compounds are very close in structure. *Dillon*, 919 F.2d at 693, 696, 16 USPQ2d

at 1901, 1904. See also *In re Grabiak*, 769 F.2d 729, 731, 226 USPQ 870, 871 (Fed. Cir. 1985) ("When chemical compounds have very close' structural similarities and similar utilities, without more a prima facie case may be made."). Thus, evidence of similar properties or evidence of any useful properties disclosed in the prior art that would be expected to be shared by the claimed invention weighs in favor of a conclusion that the claimed invention would have been obvious. *Dillon*, 919 F.2d at 697-98, 16 USPQ2d at 1905; In re Wilder, 563 F.2d 457, 461, 195 USPQ 426, 430 (CCPA 1977); In re Linter, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

In rebuttal to Applicant's assertion that the microorganisms responsible for the conversion of linoleic acid into conjugated linoleic acid are not present in humans, the Examiner directs Applicant's attention to Alonso et al. (J. Dairy Sci. 2003, 86, 1941-1946) which clearly shows that the common human intestinal bacteria *Lactobacillus acidophilus* produces conjugated linoleic acid from linoleic acid (abstract and Figure 1, page 1943, for example, reproduced below for Appellent's benefit as a courtesy by the Examiner).

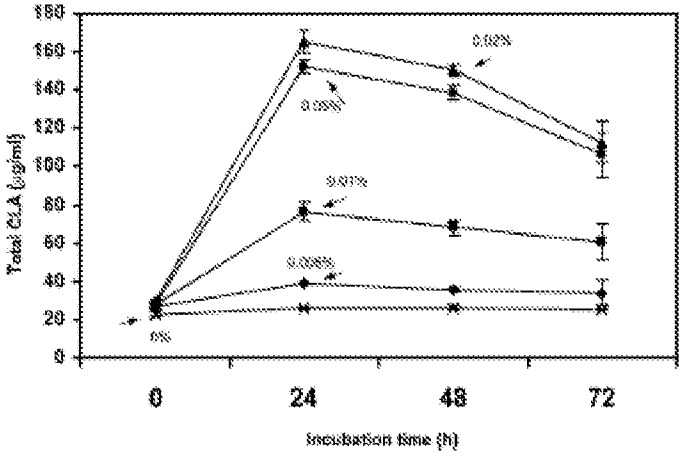



Figure 1. Production of total conjugated linoleic acid (CLA) by *Lactobacillus acidophilus* (L1) in MRS broth supplemented with 0% (x), 0.005% (◆), 0.01% (■), 0.02% (▲) and 0.05% (●) linoleic acid after 0, 24, 48 and 72 h of incubation at 37°C.

Appellent makes numerous bullet pointed assertions over several pages of the Appeal Brief and the Examiner will attempt to summarize them. Appellent asserts that: "it is not scientifically valid to draw a conclusion that because an agent causes weight loss that it can be expected to decrease hypertension" and; "The Examiner's argument that it would be obvious to use CLA to decrease hypertension because CLA administration also causes weight loss lacks scientific merit." Respectfully, the Examiner cannot agree. None of these assertions address the fact that overweight patients can be hypertensive and lowering the body weight reduces the blood pressure as taught by Kawamura et al. The Examiner cannot simply ignore the teachings in the art. Kawamura et al. clearly teach a patient population where weight loss positively correlated with reduced blood pressure in hypertensive patients. It is clear. **The method of Cook et al. is broad and includes reducing the body fat in overweight hypertensive patients in need of hypertensive treatment**. The instant claims are not distinguished from that

population. Importantly, Cook et al. teach using from 0.001 g/kg to about 1 g/kg of conjugated linoleic acid in the method (claim 2) which encompasses the instantly claimed amount of about 0.1 g to 20 g (instant claim 9). Administration of the same amount of conjugated linoleic acid must result in the same effect.

The Examiner cannot interpret the art in a vacuum. When the Examiner reads the art as a whole it becomes clear that:

- Fact #1) the art recognizes linoleic acid in the treatment of hypertension;
- Fact #2) the art recognizes that weight loss in overweight hypertensive individuals results in a lowering of blood pressure and;
- Fact #3) the art recognizes that conjugated linoleic acid, isomers of linoleic acid, is used to reduce body fat.

Appellent attempts an argument that active agents that cause weight loss can also cause hypertension and that the active agent can have other effects unrelated to weight loss. This is true for some actives such as ephedrine. However, Appellent attempts an argument that conjugated linoleic acid would be expected to result in increasing blood pressure and cites two references from 2006, as well as the Saebo Declaration, where conjugated linoleic acid has been shown to elevate the level of F2-isoprostane and that the F2-isoprostanes have a vasoconstrictive effect(Page 15 of the Appeal Brief). This argument is flawed. First, this knowledge from 2006 would not have been known to one of ordinary skill in the art at the time of the invention and secondly it is only an indirect observation and not a hard fact that conjugated linoleic acid increases blood pressure. As Appellent argues, “How an agent such as CLA acts in the body is

complex." (page 12 of the Appeal Brief). Without hard facts concerning the action of CLA in the body, such an assertion that administration of CLA would result in an increase in blood pressure is merely speculation without proof. The hard fact is that there is nothing in the art at the time of the instant invention that would suggest conjugated linoleic acid elevates blood pressure. On the contrary, the art teaches that linoleic acid, an isomer of conjugated linoleic acid, is used to treat hypertension as was known since at least 1984 with the disclosure of Shinitzky et al.

In summary, the Examiner has shown that at the time of the instant invention:

- Conjugated linoleic acid is taught to reduce body weight;
- body weight reduction is correlated with decrease in blood pressure in overweight hypertensive patients;
- linoleic acid is used to treat hypertension; and
- there is no teaching at the time of the invention which would suggest to one of ordinary skill in the art that conjugated linoleic acid would increase blood pressure.

In reviewing the art as a whole, the Examiner comes to the conclusion that the instant method is intrinsic to and embraced by the method of Cook et al. especially in view of the cited references. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary. Claims 1-3, 7 and 9 remain rejected.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/SREENI PADMANABHAN/

Supervisory Patent Examiner, Art Unit 1617

**Conferees:**

1) /Ernst V Arnold/

Examiner, Art Unit 1616

2) /Mina Haghighatian/

Primary Examiner, Art Unit 1616